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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/013,103	11/06/2001	Krishna Seshan	42390P5778D	1577

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EXAMINER	
LEWIS, MONICA	
ART UNIT	**PAPER NUMBER**
2822	

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/013,103	SESHAN ET AL.	
	Examiner	Art Unit	
	Monica Lewis	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 September 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the amendment filed November 21, 2003.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 17, 18, 21 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Bacchetta et al. (U.S. Patent No. 5,795,821).

In regards to claim 17 and 25, Bacchetta et al. ("Bacchetta") discloses the following:

a) an oxide layer (1) (For Example: See Figure 1);

b) an adhesion layer (2) formed on a surface of said oxide layer (For Example: See Figure 1); and

c) a first passivation layer (3) formed on said adhesion layer, said first passivation layer and said adhesion layer including at least one common chemical element (For Example: See Figure 1).

Finally, the following limitation makes it a product by process claim: a) by treating said surface of said oxide layer with a gas; and b) gas includes one of oxygen and nitrogen, oxygen and ammonia, oxygen and argon and ozone and argon. The MPEP § 2113, states, "Even though product -by[-] process claims are limited by and defined by the process, determination of

patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

A *"product by process"* claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972): *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); In re Fessmann, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a *"product by, all of"* claim, and not the patentability of the process, and that an old or obvious product, whether claimed in *"product by process"* claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

In regards to claim 18, Bacchetta discloses the following:

a) a second passivation layer (5) formed upon said first passivation layer (For Example: See Figure 1).

In regards to claim 21, Bacchetta discloses the following:

a) first passivation layer includes silicon nitride (Si_3N_4) (For Example: See Column 4 Lines 1 and 2).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as obvious over Bacchetta et al. (U.S. Patent No. 5,795,821) in view of Yu et al. (U.S. Patent No. 5,795,833).

In regards to claim 19, Bacchetta discloses the following:

a) oxide layer includes silicon dioxide ($Si0_2$).

However, Yu et al. ("Yu") discloses a silicon oxide layer (For Example: See Figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Bacchetta to include a silicon oxide layer formed as disclosed in Yu because it aids in providing a good moisture barrier (For Example: See Column 2 Lines 38-42).

Additionally, since Bacchetta and Yu are both from the same field of endeavor, the purpose disclosed by Yu would have been recognized in the pertinent art of Bacchetta.

7. Claim 20 is rejected under 35 U.S.C. 103(a) as obvious over Bacchetta et al. (U.S. Patent No. 5,795,821) in view of Oshika et al. (Japanese Patent No. 361292964).

In regards to claim 20, Bacchetta discloses the following:

a) adhesion layer includes silicon oxynitride.

However, Oshika et al. ("Oshika") discloses a silicon oxynitride layer (For Example: See Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Bacchetta to include a silicon oxynitride layer formed as disclosed in Oshika because it aids in relaxing thermal stress (For Example: See Abstract).

Additionally, since Bacchetta and Oshika are both from the same field of endeavor, the purpose disclosed by Yu would have been recognized in the pertinent art of Bacchetta.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as obvious over Bacchetta et al. (U.S. Patent No. 5,795,821) in view of Fu et al. (U.S. Patent No. 5,807,787).

In regards to claim 22, Bacchetta fails to disclose the following:

a) second passivation layer includes polyimide.

However, Fu et al. ("Fu") discloses a polyimide layer (For Example: See Column 5 Lines 32-40). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Bacchetta to include a polyimide layer as disclosed in Fu because it aids in providing electrical insulation (For Example: See Column 5 Lines 32-40).

Additionally, since Bacchetta and Fu are both from the same field of endeavor, the purpose disclosed by Fu would have been recognized in the pertinent art of Bacchetta.

9. Claims 23 and 26 are rejected under 35 U.S.C. 103(a) as obvious over Fujitsu (Japanese Patent No. 5511335) in view of Ohshima et al. (U.S. Patent No. 4,426,234).

In regards to claims 23 and 26, Fujitsu discloses the following:

a) a silicon dioxide insulating layer (For Example: See Abstract); and

b) a silicon oxynitride adhesion layer formed on a surface of said silicon dioxide insulating layer (For Example: See Abstract).

In regards to claims 23 and 26, Fujitsu fails to disclose the following:

a) a silicon nitride hard passivation layer formed on directly on a surface of said silicon oxynitride adhesion layer.

However, Ohshima et al. ("Ohshima") discloses a silicon nitride layer directly on a surface of said silicon oxynitride layer (For Example: See Column 2 Lines 8-24). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify

the semiconductor device of Fujitsu to include a silicon nitride layer directly on a surface of said silicon oxynitride layer as disclosed in Ohshima because it aids in preventing the out diffusion of an impurity (For Example: See Column 2 Lines 8-24).

Additionally, since Fujitsu and Ohshima are both from the same field of endeavor, the purpose disclosed by Ohshima would have been recognized in the pertinent art of Fujitsu.

Finally, the following limitation makes it a product by process claim: a) by treating said surface of said silicon dioxide insulating layer with a gas; and b) gas includes one of oxygen and nitrogen, oxygen and ammonia, oxygen and argon and ozone and argon. The MPEP § 2113, states, "Even though product -by[-] process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

A *"product by process"* claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972): *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); In re Fessmann, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a *"product by, all of"* claim, and not the patentability of the process, and that an old or obvious product, whether claimed in *"product by process"* claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

10. Claim 24 is rejected under 35 U.S.C. 103(a) as obvious over Fujitsu (Japanese Patent No. 55113335) in view of Ohshima et al. (U.S. Patent No. 4,426,234) and Bryant et al. (U.S. Patent No. 5,698,456).

In regards to claim 24, Bacchetta fails to disclose the following:

a) photodefinable polyimide soft passivation layer formed on said silicon nitride hard passivation layer.

However, Bryant discloses a polyimide layer (34) formed on silicon nitride (For Example: See Figure 4e). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Fujitsu to include a polyimide layer as disclosed in Bryant because it aids in protecting the device (For Example: See Column 5 Lines 6 and 7).

Additionally, since Fujitsu and Bryant are both from the same field of endeavor, the purpose disclosed by Bryant would have been recognized in the pertinent art of Fujitsu.

Response to Arguments

11. Applicant's arguments filed November 21, 2003 have been fully considered but they are not persuasive. Applicant argues that Fujitsu and Bacchetta fail to disclose "treating said surface of said silicon dioxide insulating layer with a gas." However, this is a product by process limitation as pointed out above and it does not patentably distinguish Applicant's product claims.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722 for regular and after final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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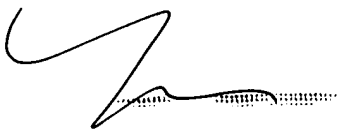
February 23, 2004



Mary Wilczewski
Primary Examiner